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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,264	04/01/2004	Jong Jin Park	021269-013	8445
21839	7590	12/02/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			DICKEY, THOMAS L	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,264

Applicant(s)

PARK ET AL.

Examiner

Thomas L. Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/1/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The preliminary amendment (which amends only the Brief Description of the Drawings) filed on 4/7/04 has been entered.

Election/Restriction

2. Applicant's election without traverse of Group I, claims 16-23 in the Paper filed 10/19/05 is acknowledged.

Oath/Declaration

3. The oath/declaration filed on 4/1/04 is acceptable.

Drawings

4. At such time as Applicant's petition filed (4/7/04) under 37 CFR 1.84(a)(2) is granted, the formal drawings filed on 4/1/04 will be acceptable. Applicant is reminded that the first paragraph of the brief description of the drawings section of the specification must eventually issue with precisely the following language included:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

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No substitutions or approximations of this language are allowed under 1.84(a)(2).

This language is not intended to burden or obligate the Applicant but merely to inform the public (if and when this application publishes as a patent) of Office policy concerning color photographs in issued patents. Generally speaking, color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

Priority

5. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

6. The Information Disclosure Statement filed on 3/1/05 has been considered.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the

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international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16-19, 22, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by KUNZE ET AL. (2005/0008880).

Kunze et al. discloses a luminescent layer 16 contained in an organic/inorganic hybrid electroluminescent (i.e., display) device prepared by a method for forming a semiconductor nanocrystal pattern, comprising the steps of i) producing a semiconductor nanocrystal film by dispersing semiconductor nanocrystals or a photosensitive composition in an organic solvent (appropriate organic solvents including, note paragraph 0047, aprotic solvent and/or an apolar solvent), and coating (note paragraph 0043) the dispersion onto a substrate by spin coating, dip coating, spray coating or blade coating, using said semiconductor nanocrystals where the nanocrystal is surface-coordinated (note paragraph 0039) with a compound (a fluorinated surfactant and/or a fluorinated hydrocarbon, present in an amount of from 0.01 wt. % to 1 wt. %, preferably 0.05 wt. % to 0.5 wt. %, note paragraph 0039) containing a photosensitive functional group, or using said photosensitive composition comprising a) semiconductor nanocrystals (note paragraph 0041), and b) a photocurable compound (an uncured film of cyclic Group IVA compounds capable of being converted to an insoluble polymer by irradiation with UV light through a mask, note paragraph 0049); ii) exposing the film through a mask (note, again, paragraph 0049); and iii) carrying out developing the exposed film (0049, again) using an organic solvent, a weakly acidic or basic solution, or water (note paragraph

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0057); wherein the film of step i) is dried (note paragraph 0053) at 30-100 degrees Celsius before exposure of step ii), wherein the organic solvent further comprises a photoinitiator selected from a group consisting of acetophenone-, benzoin-, benzophenone- and thioxantone-based photoinitiators (specifically, 2,2'-azobisisobutyronitrile (AIBN), 1,1'-azobiscyclohexanecarbonitrile, dibenzoylperoxide, butyl lithium, silyl potassium or hexamethyldisilane, and others, note paragraph 0053). Note figures 1A-B, 2A-B, and paragraphs 0039, 0043, 0047-0050, 0053, 0057, 0061, 0064 of Kunze et al.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over KUNZE ET AL. (2005/0008880) in view of ECKBERG ET AL. (5,178,959).

Kunze et al. discloses a method with all the limitations of claims 20 and 21, including carrying out light exposure using a light source with a wavelength of 252 nm (between 200-500 nm) through a photomask having a predetermined pattern, except carrying out said light exposure at an exposure dose of about 50-850 mJ/cm² and an energy range of 100-800 W. Note figures 1A-B, 2A-B, and paragraphs 0048-

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0050,0053,0057,0061,0064 of Kunze et al. However, Eckberg et al. discloses that the patterning of polysilane, polygermane, poly (germa) silane or poly (sila) germane such as used in Kunze et al. is optimally carried out using light exposure at an exposure dose of about 50-850 mJ/cm² and an energy range of 100-800 W. Note column 8 lines 32-38 of Eckberg et al. Therefore, it would have been obvious to a person having skill in the art to augment Kunze et al.'s method with the light exposure dose of about 50-850 mJ/cm² an energy range of 100-800 W such as taught by Eckberg et al. in order to optimally expose and develop said light exposure step for the material employed by Kunze et al.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information

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for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas L. Dickey
Patent Examiner
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11/05